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* INDIANA SINCLAIR-TIMEX NEWSLETTER *

January--February 1990

Editor-Frank Davis
Assist - M. Fellerski

This issue....

Next meetings -March and April
Sinclair News and Rumour
Making A Wafadrive Parallel Printer Cable by M. Fellerski
12 Volt Modification by Wm. E. McKelvey (2068 Video !)
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The Sinclair Desktop Publishing Journal by M. Fellerski
For Sale and Want Ads

I.S.T.U.G. MEETING

The meeting for March 31st will be held at the Eagledale Public Library, meeting room, 3225 Lowery Road, Indianapolis, IN. This meeting will start at 1:30 P.M. This is one block East of Georgetown Road on 34th. For directions call Frank Davis at 317-473-8031 or Paul Holmgren at 317-291-6002.

The meeting for April the 28th will be held at the Eagledale Public Library, meeting room, 3225 Lowery Road, Indianapolis, In. The meeting will start at 1:30 P.M. and run approximately 3 hours. For directions call Frank or Paul at the above given phone numbers. I am looking forward to a large turnout at both meetings.

The last meeting (in February) seems like all of nature plotted against having. As it turned out only Paul Holmgren and Ted Heckman were able to make it. Here in the Northern part of the State of Indiana we suffered from blizzard conditions that day, along with officially closed roads that prevented Frank Davis and Mike Ingall from attending. After spending 1 hour and 40 minutes just trying to get from Peru to Kokomo, they gave up and retired to a nearby Mall, which was surprisingly empty for a Saturday afternoon. To compound things, the meeting had just been moved prior to this event, to Paul Holmgrens. We had been "bumped" by a group holding an event at the library that decided to continue their event on into the afternoon. Hopefully we never have another failed attempt at having a meeting.

Tentatively we are planning to have the June meeting be a combined club picnic and general meeting. We are planning to have this at Frank Davis's newest place in the country near Peru, In. This will be an event where you will be encouraged to bring the spouse and children, along with a dish to throw in for the feast. There will be plenty of room for all to stretch out and games for the outside. It is high time some of our families get to know each other and realize we can do more than stare at monitor screens. Directions for how to get there should be in the next issue and maybe even a map. I would like to use this as a time to discuss the future of ISTUG and how things went at the Sinclair Expo in Milwaukee. Many of us will probably have new hardware and software we picked up there to show off. We have never had a club picnic before, but Willie Jones has suggested it for a year or two. Now let us make sure that Willie shows up for this.

by Frank W. Davis

If you recall, I recently told all of you that Computer Shopper had dropped their Classic Computer coverage in favor of more "mainstream computers, such as IBMs and MACs". This left the Adam, TI 99/4a, Color Computer from Radio Shack and Commodore users out in the cold...along with us, the TS users. Very shortly after this I received a letter in the mail from an unknown to me (at the time) magazine. This was Vulcan's Computer Buying Guide. They offered to pick up where Computer Shopper left off. I almost forgot about this till a week ago I was in a Waldens Bookstore, and saw a copy of their mag. I looked inside and there was an article by Richard Matajovic of Columbus, Ohio, about using a TS1000 with Aerco Disk Drive system to read MSDOS disks. Richard did a good job, and at the same time dispelled a myth that you could not use a TS1000 to read MSDOS disks. And if it can be done with a TS1000, then why not with the TS2068. How about someone coming up with a way to do this with the Oliger and Larken interfaces? This is already available for the QL, via Super Media Manager (to some extent), Discover, Multi Discover, and QL to PC Linkup, along with a Public Domain program to do so in The Quanta library. All have varying degrees of success and ease of use. Now let us at least be able to read and write to these MSDOS disks with our other Timex-Sinclairs!

To find out more about Computer Buyer's Guide pick up a copy at a Waldens Bookstore, or write them at Two Riverchase Office Plaza, Birmingham, Alabama, 35244. They can be called at either 205-988-9708 or 800-366-0676. The card in the magazine says that a one year subscription is \$12. It is only half the size of Computer Shopper (for now) and is of good quality.

QUANTA has a new North American librarian. He is our own beloved Paul Holmgren (alias the Mad Programmer). He is now taking orders for those who wish to purchase a copy of the almost 500 public domain QL programs available through QUANTA! He can also update the library for those who have already made a previous purchase. Many of these programs are of very high quality and well worth the price. Some of them do require a small royalty, but only a few. Paul can be reached by phone (at reasonable hours and not collect) by dialing 317-291-6002 in the evening. You can write him at 5231 Wilton Wood Ct., Indianapolis, IN 46254. For replies please enclose a LSASE to help defray costs of writing back to you. Also check on membership in QUANTA and their excellent monthly QL newsletter from England. This is a volunteer position and is being done as a service to all of you QL users, so make use of it.

At Sears recently I picked up a new toy, a Laser PC3. This is a notebook computer, and is Z80 based, with 32K available RAM. It can run off of an AC adaptor or 4 AA batteries. It has a built in word processor, clock (with 4 separate alarms), 80,000 word spelling checker, expense account spreadsheet, calculator, telephone directory, auto dialer, appointment book, personal file, both serial and parallel printer interface, expansion slot and typing tutor. All of this for around \$150 to \$160. It comes with a leather carrying case, parallel printing cable, cable to up and download to either a Mac or an IBM compatible, and PC Tools Deluxe 5.5 to allow you to easily communicate with either an IBM or MAC with your portable. It has a cassette port to load and save data to a tape recorder or you can save files to a large computer and save to disk. I have used the word processor with my inkjet, no problem, and the mailing list in the phone directory with my Seikosha printer. Not bad for the price.



TECH TALK

Making A Wafadrive Parallel Printer Cable

By Michael J. Felerski

If you where one of the lucky people who purchased a Rotronics Wafadrive but was unable to obtain the parallel printer cable or your cable has been damaged, here is a way you can make your own cable.

Three parts are needed:

A 36-Position Flat Cable
Connector (Centronics Type)
Radio Shack #276-1533

A 26-Contact Card Edge
Connector (IDC Style)
3M #925130-26-R

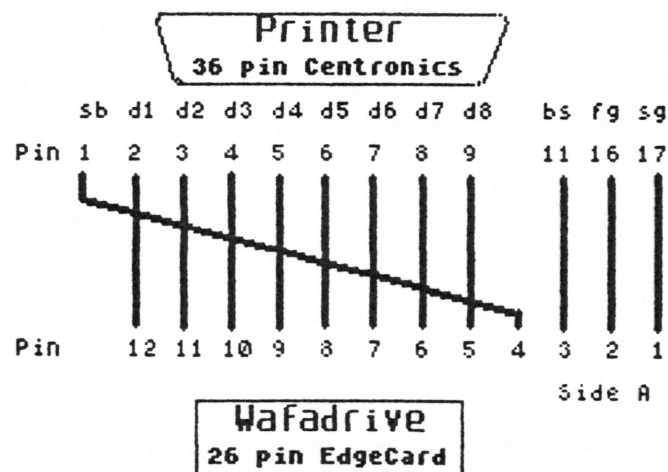
OR

A 34-Contact Card Edge
Connector (IDC Style)
Radio Shack #276-1564

3 to 5 foot of flat (ribbon)
cable. 25 or 36 conductor.
Radio Shack #278-772 #278-774

I recommend the 3M connector which is used to connect to the back of the Wafadrive because it is the exact size needed. But, since this may be a difficult part to obtain, you may also use the Radio Shack 34 contact connector, but you will have to use a hacksaw to trim off one side in order for it to fit on the edge card of the Wafadrive.

The wiring diagram for the two connectors is below. Since this is a centronics interface at the printer's end, the cabling should be the same for any printer, but check your printer manual first. This cable uses all of the Wafadrive's parallel lines but does not use all of the printer's parallel lines.



The lines are defined as follows:

Printer pin	Line name	Wafadrive pin
1	Strobe	4
2	Data Bit 1	5
3	Data Bit 2	6
4	Data Bit 3	7
5	Data Bit 4	8
6	Data Bit 5	9
7	Data Bit 6	10
8	Data Bit 7	11
9	Data Bit 8	12
11	BUSY	13
16	Frame Gnd	20
17	Signal Gnd	1

Start by attaching the 26 (34) contact card edge connector to the ribbon cable (Remember to remove any extra/unused wires from the ribbon cable first so that only 26 or 24 are used.)

Crimp the connector so that the small metal U's line up one per conductor. These U's are used to break the casing and make contact with the bare wire. Crimping tools are recommended, but I find that a small shop vice works extremely well.

Now take the other end of the ribbon cable, and using a sharp hobby knife, carefully remove/cut away the eighth line from the left side of the cable (see Hint below) so it is no longer attached to the conductor to the right or left of it. Make sure not to cut through the insulation such that the copper wire is exposed. Pull back and remove this line for about an inch and a half. Do the same to line one, except cut this line off after it is pulled back (it is not used.)

HINT

To find the eighth line, hold the edge card connector with slot facing you, and count along the ribbon cable from right to left. NOTE: If you are using a 24 conductor ribbon cable, you need to find the sixth line to cut away and pull back. This line is the STROBE line and must connect to Pin 1 of the Centronics connector.

The next part requires you to take the Centronics connector and position it on the ribbon cable so that the wide end is toward the edge card connector.

Position the eighth line in the U of the Centronics pin 1. Now place the remainder of the ribbon cable on the U's (pins 2 through 9, and 11) remember that pin 10 is left unused. It is also important to note that most printers will not use pins 16 and 17 so I recommend that they are not crimped/used.

Very carefully, crimp the Centronics connector keeping the eighth (sixth) line in pin 1. Lastly, use a continuity tester to check all connections so that they match the schematic on the left before attaching and using it on the Wafadrive and printer.

(NOTICE: ISTEUG and/or the author is not responsible for any damages to equipment resulting from information contained in this article.)

12 VOLT MODIFICATION

This little mod. helps clean up the picture and the computer runs cooler, especially if you have more than one peripheral attached.

Using proper care open your beloved 2068. Using figure #1, find the 78L12 voltage regulator. It looks like an ordinary transistor (only good for milliamps). Using great care remove it. Make sure the holes are cleaned out. Now install the 78M12 (larger for more current). Radio Shack part #276-1771 about \$1.20. Use figure #2, note that it is the BACK of the regulator that should be facing up.

Now for the test. Move everything away from the circuit board, without the keyboard attached, power up. Your 2068 should display the copyright notice. If it does not, power off immediately!! Check the orientation of the 7812. If you have a volt meter check the input and output.

After all goes well put your 2068 back together and gaze into your nice clean picture.

By William E. McKelvey

INSIDE YOUR 2068

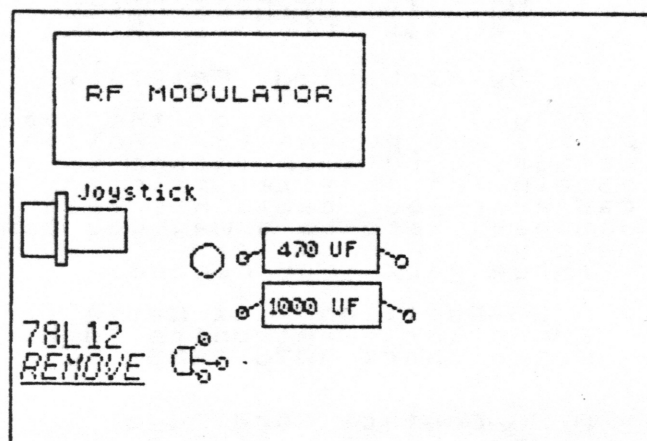


Figure #1

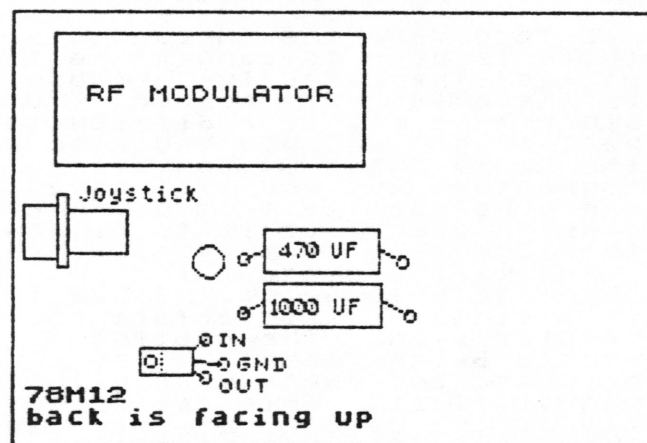


Figure #2

Power Supplies available
William E. McKelvey
744 Wall Road
Spring Lake Heights, NJ 07762
(201)974-0297

MAKING PROGRAM LENGTH CASSETTE TAPES

by
DONALD S. LAMBERT

The idea started out with a cassette of programs on a mailing list of a User's Group. You were sent the cassette and when you got it copied (there was supposed to be a time limit) and added a program if you had one and sent it to the next person on the list. The theory was great but due to the problems of various people the tape seldom made it back to the User's Group. But in my case various problems prevented me from SAVEing/LOADing successfully more than a few of what could have been great programs.

And my problem was complicated by the fact that the tape recorder that got the most consistant LOADs did not have a tape counter; so if the third program on the tape failed to LOAD the first time it was a case of typing in the program name (if known) and waiting through several possibly long programs and then if it didn't LOAD you weren't sure if you had passed that program yet. Also, once I got a successfull LOAD I would move it to a cassette with that program on both sides so as to not have that multiple program tape hassle. But even using a 30 minute tape makes a lot of waste tape and you still have to wind to either the beginning or to the end to be ready to LOAD the next time and that wasted more time. So I muttered and fumed but I had programs that LOADED successfully.

I was at a garage sale (I stopped to check out some straight backed chairs) and I saw a pile of cassettes and there was no price so I asked for a lot price and it was cheap per cassette so I had some cheap stuff to work with. I had no idea of what to do with them - just a desire to use them for a better way than I was currently using. Later, I was browsing in a Radio Shack store and I saw a plastic gadget that could be slipped onto a 1/2 inch piece of wood and a cassette could be mounted on it and when you turned the crank you could spool the tape from one spool to the other inside the cassette but it was one turn of the handle to one turn of the spool. I saw a possible use for it so I bought two plus a tape splicing kit for cassette tape and got some small pieces of 1/2 inch pine at a lumber yard.

I mounted the two plastic winders and the splicing kit on the frame I made out of the wood and clamped it to a typing table and now I could take a cassette with doubtfull tape on it pull out the tape completely and cut it at the leader/magnetic tape splice and splice in the good tape and crank for what I hoped would be the proper length, cut the tape and then splice it to the other leader and have a shorter tape. It worked however the splice wasn't neat in appearance and occassionally it wanted to stick to the tape below it on the spool and still if I guessed wrong I had a tape that was too short or too long.

Logic said that if it takes four minutes to LOAD a program then it will also take 4 minutes to SAVE it too. So if I timed the LOADING of that program I could put a blank cassette in a recorder and run it that long plus a little extra for safety cut the tape and wind it into finale cassette after splicing and have a program length tape. So I would sit there winding the CRAGIST

hand crank while running the tape through a bit of a tape cleaning cloth to maintain a little pressure on the tape. The system worked and only had a few flaws - the splice would once in a while hang up in the cassette; the tapes had leaders; and finally the worst flaw - it was very time consuming.

I found I had to anchor the ends of the cut tape to the cassette shell with Scotch tape to prevent the leaders and or the tape from being lost into the cassette. After I had four or five such accidents I finally took a cassette apart, about half the yard sale cassettes had screw construction and the other half were sealed plastic. Of the two I took apart, the spools were of different construction. One had a notch with what looked like a tiny piece of tubing had been stretched to insert and hold the tape in place and the other had a plastic segment that snapped in place to retain the tape.

And about then I discovered that the tape I was using to SAVE on sometimes was marginal. I had better quality tape so I tried that and it was a better SAVE. And the better tape was in a screw together cassette. And while an idea was flickering in my mind I did a survey. I had cassettes that screwed together from seven different manufacturers. I carefully opened each and laid them out without mixing parts. Being an inspector at Collins Radio (mechanical and sheet metal inspector) I got out my worn retired micrometer and started measuring the spools of the cassettes and made a chart of the dimensions. And found the physical dimensions: outside diameter, thickness, clearance for the central flange of the cassette shell - all were so close to the same that I concluded that a spool from cassette A would work in any of the other cassettes so long as the spool with its mating segment retainer were used as a pair.

So I started putting the take up spool in the supply tape cassette assembling the cassette again and SAVEing the program and cutting the tape and putting the SAVEd portion of the tape in the other cassette and reassembling the retainer to the spool and then reassembling the cassette. But I ran into problems of centering the tape on the width of the cassette spool and also once in a while of dropping the whole unassembled cassette on the floor and trying to find all the pieces. But I had program length cassettes but at the expense of frustration from the fumbling. What I needed was a fixture to hold everything.

About this time I aquired a pair of T/S 2020 cassette recorders and built a caddy so I could use them both at the same time and went to battery power on the SAVE machine to get reliability on the SAVES and I built a LOAD meter/speaker loading aid to monitor the LOADs.

Suddenly I saw what was needed and how to build it (see enclosed drawing) One thing that I don't have incorporated in the design yet is a pair of plastic cups to hold all the little parts until the cassettes are reassembled. The cups could be fastened on with double adhesive tape. The board has room for both the cassette for the supply tape and the cassette being made the dedicated program cassette and the bolt to hold the spool that is to be fastened to the end of the tape. The notched out space is for the bulge at the working part of the cassette so that

the edge of the tape when it is fastened to the spool will be in the same plane. The nut holds the spool securely so that the plastic retainer can be snapped in place.

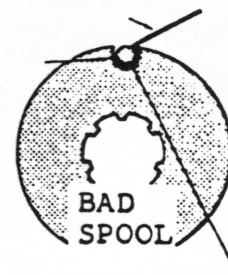
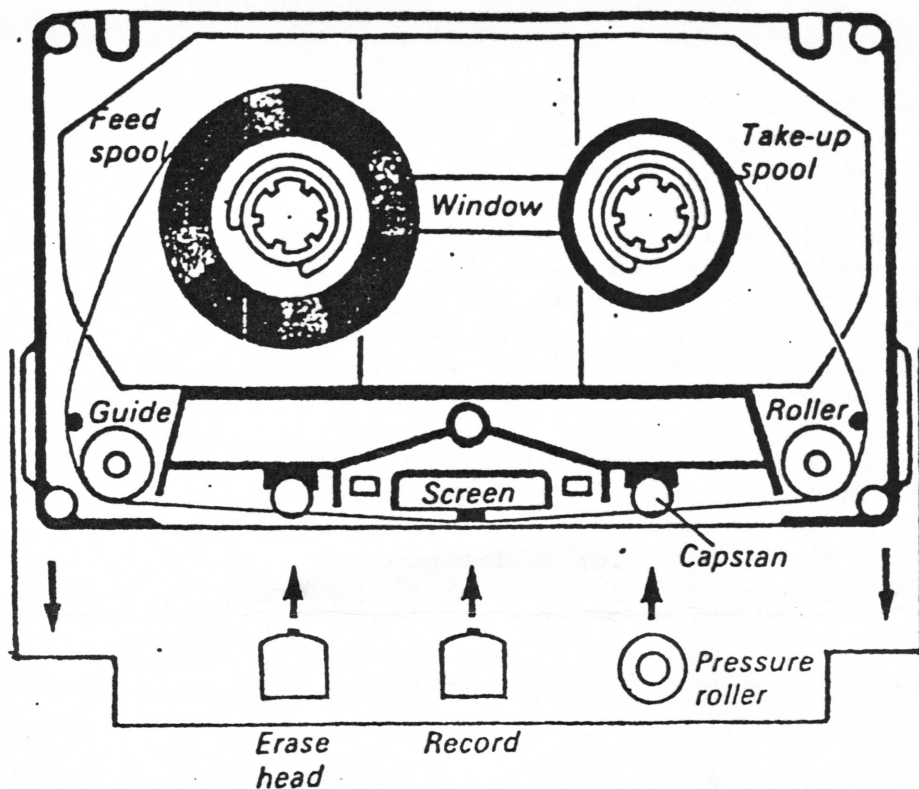
The bolt that holds the spool securely is a 5/16 bolt the threads are not critical except that you have to have a nut to fit the bolt. Take along a cassette so that you can be sure that the bolt will go through the sprocket holes in the spools. If the bolt is loose in the hole in the board use glue. I don't use a wrench on the nut - finger tight has been tight enough.

The four wood dowels (5/16 inch diameter) that are used to keep the spools in place have to be reduced in diameter to slip easily into the sprocket holes of the spools. I inserted the dowels in the board marked the projection and chucked the end that was in the board in a 3/8 hand drill and with the drill running held a pad of sand paper against the dowel and reduced the diameter till the spool slipped easily over the dowel. The dowels were glued to the board when all other work was done on the board.

I used 1/2 pine board, 6 by 11 long but a 8 by 11 long would be better, for the base board but any wood would work. I marked the spot for the depression after temporarily inserting the dowels and putting a cassette over the dowels and used a wood chisel to cut the depression 1/8 inch deep. An alternate construction would be to fasten an identical sized piece of 1/4 inch plywood to the base board with wood screws and after drilling the holes and marking the depression cutting the depression out of the plywood with a coping saw. If that route is taken, you could cut two or more circular cutouts to be used for the small parts retainers. Actual size and layout can be modified to suit the user. I put self-sticking cushion feet under the board to keep it from sliding around and to clear the bolt head.

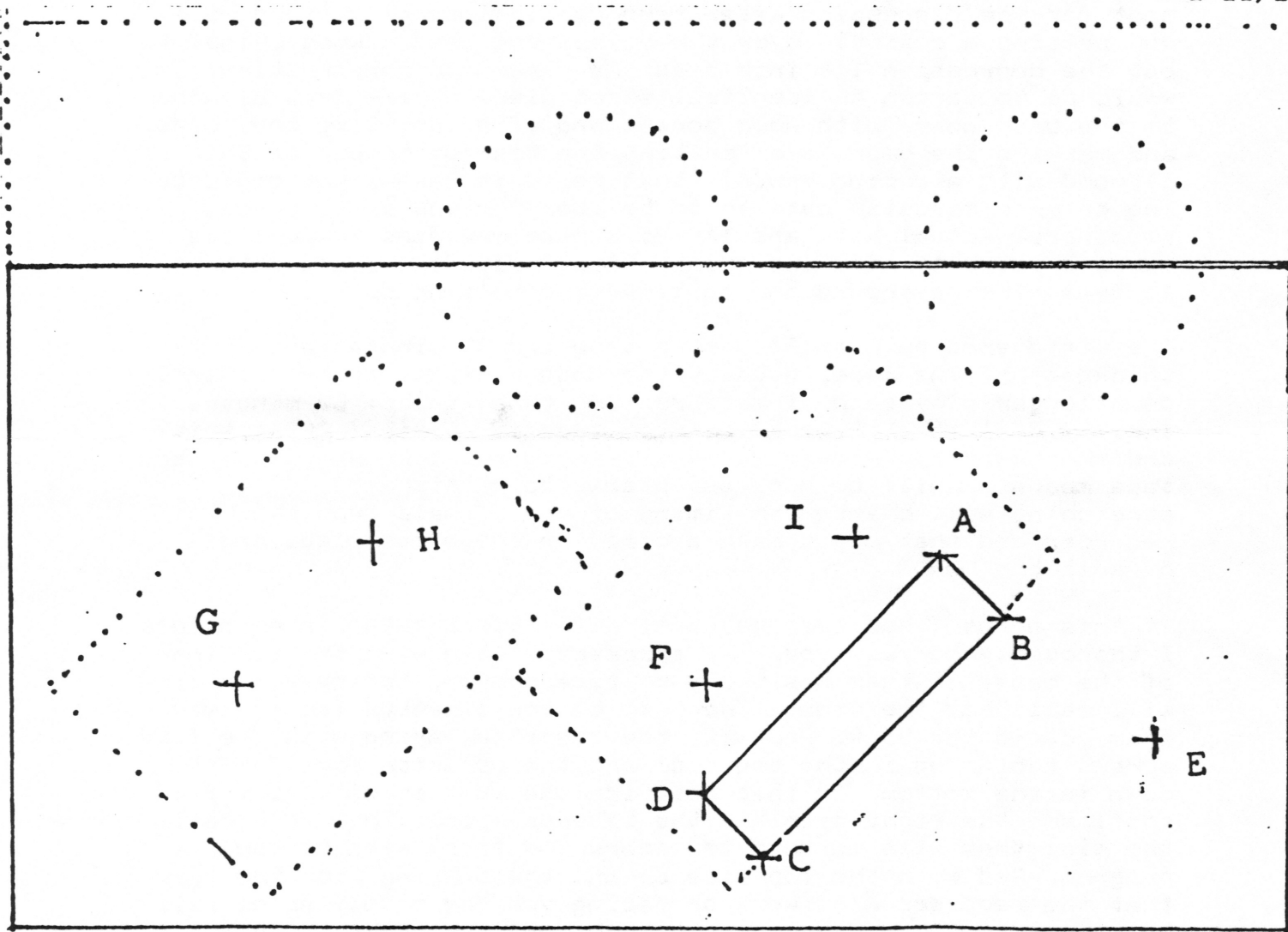
The difference between 60 minute tape and 90 minute tape is the thickness of the tape, usually the base material is much thinner on a longer play tape. I measured the three tapes: 60 minutes is 1 mil (.001) thick, the 90 minutes tape is .6 mil (.0006) thick and the 120 minutes tape is .4 mil (.0004) thick. And a thinner tape means it will be more susceptible to stretching and stretching will change the timing of the signals from the recorder and that might make a computer lose its place and default the LOAD.

At this point I had best get some definitions established before I thoroughly confuse you. Lay a cassette down with the portion of the cassette that has the bare tape showing facing you and we will call that the front. The Part of the cassette facing away from you is the back. And with the cassette laying with the five screws facing up is the top side and the opposite side facing down is the bottom. In that position the left spool is the feed spool and the right spool is the take up spool. The top side is the side that will be used to record the first side of the program. And with the top side up and the opening with the tape that the recorder will work on facing you the supply spool will be on your left and the take up spool on your right. Working that way is the only practical way of making the backup copies without losing your sanity while trying to remember which side



DIMENSIONS FOR PLACEMENT OF CUTS OR PARTS

DIM	X	Y
A	3 1/16	3 1/16
B	2 1/2	2 17/32
C	4 19/32	9/16
D	5 3/32	1 1/16
E	1 3/16	1 9/16
F	5 1/16	2
G	9 1/16	2
H	7 15/16	Radius from G 1 11/16
I	3 27/32	Radius from F 1 11/16



THIS END GAGE X

THIS SIDE GAGE Y

is the just recorded program.

Disassembly and reassembly: With the cassette with the screw heads up, use a Phillips screw driver to remove the screws (my screw driver is magnetic enough to pick up the screws and doesn't seem to erase the tape). With all the screws out, I usually have the cassette in my hand, gently try to separate the two halves at the tape opening and when it separates and you can lift the top off of the bottom shell half and with the tape opening facing you rotate the top half away from you and lay it down. If the lubricated paper didn't stay with the top half lift it with tweezers and rotate it the same way and lay it on the open top half. Now set the cassette on the board with the dowels going through the spools. On the first few cassettes eye the way the tape is routed till you have it firmly in mind. Reassembly is the reverse except that before you put the top on you must be sure the tape is in the proper place. An aid to controlling the tape is to keep the tape from having any slack in it by gently turning the supply spool to take up the slack with a finger tip. When the top is in place look to be sure the tape is still in the proper place and turn the take up spool a turn or two with a finger to see if the tape is free. You will find that static electricity will make the tape "float" away from the cassette shell.

Now the step by step procedure. I first open up and strip out the tape from the cassette that I am going to put a program in. If it is tape that is no good I lift out the take up spool with the no good tape on it and push the retainer off to the side of the spool and lay the retainer and the spool in that cassette's parts place and then lift the supply tape spool out. If that is tape I am going to discard I push on the spool while holding the tape and if it isn't wound too tight it will push off at the spool and then you can slide the retainer off and put the retainer and the spool in the keep place and toss the tape in the wastebasket. I place one of the spools on the bolt and snug the nut up on the bolt. I lay the cassette to one side.

I open up the cassette that is to be the supplier of the tape for the program and lay it in the position next to the bolt and remove the take up spool and lay it and the retainer aside and run the tape by the spool on the bolt and press the retainer against the tape and into the notch for the retainer and with the end of the retainer nearest the supply tape started first press on the retainer till it snaps in place. Holding the tail of the tape with tweezers cut the tape tail next to the spool with an exacto knife and after removing the nut place the spool in place in the cassette and position the tape and lay the lubricated paper and the top half of the cassette in place and replace the one screw that is in the center of thicker part of the cassette. The other screws do not need to be replaced now.

With your finger or a slip on eraser on a pencil take up all the slack in the tape winding it all onto the supply spool and put the cassette in your recorder and set the counter to zero or use a timer. Get your program ready to SAVE and start the recording and I run the tape to a count of 10 on my T/S 2020 recorders and when it reaches 10 I hit ENTER and the SAVE routine begins and CRAGIST

I sit ready to zero the counter just as soon as the SAVE routine stops. When it stops I reset the counter to zero and run the recorder till it has a reading of 15 and I stop it. I take the tape out of the recorder and cut the tape at the pressure pad area with a pair of scissors careful not to damage the pressure pad or the spring that holds it in place. Open the cassette and position it in position two and place the first cassette in the first position and take the just recorded tape out and turning it over place it in the supply spool position and put that cassette's other spool on the bolt fasten the tape to it and place it in the cassette. This time when you reassemble the cassette you will put all the screws in place. If one screw strips and won't hold you can leave it out or you can try to put a tiny sliver of wood or paper in the hole and as a last resort you could use glue. Now you are ready to record the same program on the other side of the tape. After you have verified that both programs are good since you have reassembled the cassette you can remove the safety tabs and label the cassette. When you SAVE the program on the reverse side of the cassette you don't have to watch for the end since you already have a program length tape.

What tape do I use? Some of my often used programs are on 90 minute tapes- and as far as quality goes there is one brand that has lower output on LOADING and thus more possible failure on LOADING and also observable drop outs - and that is Memorex db. And besides it comes in a sealed cassette so you have to destructively open up the cassette to remove the tape and take a chance on damaging the tape. I have used the following and they are good: Sony HF60, Maxell UR 90, TDK D90, Sony LNX 90, and BASF LH-EI 60 (does have the spool that can't be reused but the output is extremely high although I had one cassette that had a drop out). I try to look over the cassettes to be sure that they have the three important factors: screws used in assembly, have the spool that has the plastic segment for tape retaining and the cassette body itself is of good quality. In purchasing cassettes for the shells to be used to reload tape into I take along a Phillips screw driver and have disassembled a cassette at the counter to see the quality of the construction. Of course I purchased the cassette first and only once did I get static from the sales person and I just asked her who owned the cassette? I would look to see that the shells were not flimsy, that is where a lot of the cheap manufacturers save money, in fact some even had the plastic so thin that there were holes in it and the cassette could be easily twisted and broken. Next check to see that the spools have the removable plastic segments that snap in and that the spools look smooth (I have never seen bad quality in the spools) and last look at the window where you can see how much tape is left to run. A good cassette has a solid window, either the cassette is molded of clear plastic or else the window is clear and glued in place; cheaper cassettes have no closed window and use a clear plastic friction paper to keep the dirt out of the cassette and a very few have nothing at all.

I am going to Larken disk drive on my T/S 2068 so I will not use or use as much the tape system for it but I will still use cassettes for the T/S 1020 system.

CRAIGIST

FOR SALE AND WANT ADS

This is offered free to users and dealers of Timex, Sinclair and Cambridge computers. Send your ad to 513 East Main St., Peru, In 46970 and it will be placed in the next available issue. Find that hardware or software you have been looking for. ..get rid of that no longer used item...or just ask for help figuring something out related to your computer.

(1) For sale to best offered price: TS2068 color computer in original box with 3 programs (keyboard tutorial, home accounting and turtle graphics) and user manual. TS2020 cassette recorder in original box with AC adaptor and instruction book. TS2040 32 column thermal printer with 3 1/2 rolls of paper and instructions. All power supplies and cables for the above and TV switch box. Aerco printer interface with cable for TS2068. 2 Gemstick-Pro Joysticks. Sams TS2068 books for both the Beginner/Intermediate and the Intermediate/Advanced Guides. 22 pieces of software for the TS2068. The computer has been checked out by Dan Elliot and is in excellent working condition. Contact me at the following address: Jerry Wheeler, 320 Elder Street, Portland, In 47371.

(2) WANTED: I am buying used or new programs, computers or hardware for the TS2068, QL and Z88. Send me your list of what you want to sell and your asking price. If the price is reasonable and it is in good working order, then let's do some business! If it is non-working but has parts that can be used for repair parts, then it can still be considered. Send list and SASE to Eliad P. Wannum, P.O. Box 1095, Peru, IN 46970.

(3) WANTED: Articles, reviews and program listings for the ZX81, QL and the Z88, for publication in the ISTUG Newsletter. No pay, but you get published, reader recognition and the gratitude of other Sinclair users. Send all submissions to ISTUG Newsletter, 513 East Main Street, Peru, IN 46970. Also looking for artwork generated on any of the Timex, Sinclair or Cambridge computers for use in the newsletter; hardcopy or on disk or tape.

(4) Dear Sirs, I am a T/S computer nut! In fact I have 7 T/S computers, a color computer, a Jupiter Ace 4000 and soon to have a Sinclair QL. Anyway, I live in a small rural area and would like to start a BBS for all the local users. Since I live in such a rural area a BBS would not be used 24 hours a day, I would like to be able to use a TS100 to run a BBS on. That way I wouldn't tie up one of my bigger computers and would keep costs down. I would like to know if you could tell me where I could find a BBS program for the TS1000. I would like to use a 32K-64K computer w/a 2050 modem or a ByteBack MD-11 modem. I have seen a few ads for "Micro-BBS-1" by Gordon Young. It was for a TS1000 w/a ByteBack MS-11 and 16k. I have yet been unable to find a copy of this program. Do you know where I could get a copy. If I can't get a copy of that program, I was thinking that I might be able to use a copy of Tinyboard with the TS1000 Extended Basic?? Where can I get a copy of Tinyboard? I would appreciate your help greatly! Thank you very much. Steven Blackford, RR 1 Box 552, Mercer, MO 64661. (EDITORS NOTE: How about someone helping this guy out and put a new Sinclair BBS on the phone lines.)

I. S. T. U. G.
513 EAST MAIN STREET
PERU, IN 46970



Address correction requested:

Don Lambert
3310 Clover Drive S.W.
Cedar Rapids, Iowa 52404

ISTUG is a not for profit, educational organization dedicated to helping users of Timex, Sinclair and Cambridge computers. We offer a hardcopy and software library for our membership along with technical assistance and monthly meetings (usually the last Saturday of the month at 1:30 P.M.). Full membership is available at \$12 per year and newsletter only subscriptions at \$9 per year. Send all inquiries, along with SASE, to ISTUG, 513 E. Main St., Peru, IN, 46970.